ABSTRACT

The present invention provides new compositions of matter, referred to as quasi-crystalline carboxylates (QCCs), their preparation and use. The materials comprise a quasi-crystalline hydrated magnesium-aluminium hydroxy carboxylate and are characterised by the presence of at least a strong reflection in the powder X-ray diffraction pattern at a basal spacing in the range of 5 to 15 Å. The invention further relates to a process for preparing the QCCs, Mg-Al solid solutions and anionic clays under acidic conditions. The QCC is prepared by aging an acidic mixture of a magnesium carboxylate and an aluminium source. Calcination of the QCC results in a Mg-Al solid solution; rehydration of this solid solution gives an anionic clay.